READ THIS FIRST

Good documentation should be meaningful apart from the things it documents. Herewith, the 1987 PC Forum documentation, which we hope you will enjoy whether or not you attend. (Transcripts will be available sometime later this year, but this notice does not constitute a formal announcement.) In the pages following you will find some random, unfinished kick-off thoughts about some issues to be discussed at the Forum -- all to the end of building the aftermarket by creating a satisfied installed base. Next are profiles of the speech-makers, except for Bill Gates, who needs no introduction. We're taking the risk, of course, that what we say here may seem uninformed or naive in the light of what will happen at the Forum and in the months ahead. But that's a risk every time we commit anything to paper, and it's why this newsletter is called Release 1.0. Now read on...

THE YEAR AHEAD: THE 80386

The last time we were waiting for a standard from IBM, there was little to offer in its place. As it happened, the 80286/PC AT caused little disruption; it didn't really change things beyond introducing new performance specs for the same old standard. Now we're in the same situation again. But this time it is Compaq that has merely amplified the standard, and IBM that is on the brink of announcing a new product that will diverge from the standard, perhaps significantly. This time developers and customers have other options -- the Mac, and the 80386/UNIX combination, as well as systems from Sun and DEC, and the reinvigorated RT PC.

The prospects for UNIX look increasingly bright as DOS for the 386 looks increasingly distant. Many developers would gladly develop on top of a 386 UNIX -- if only they could be sure that their competitors would do so too. Indeed, many people suspect that underneath, 386 DOS will be quite close to UNIX, albeit with a DOS "look-and-feel."

WELCOME TO THE FORUM!
As the connectivity and fungibility of micros, minis and mainframes grow, the selection and deployment of pcs will increasingly depend on what equipment is used elsewhere in an enterprise. Pcs not only may work with mainframes; they may offload or even replace them. Pc concepts, such as peer-to-peer connectivity instead of terminal-to-host connections, will irrevocably alter the outlook of MIS departments. But that does not mean "power to the user" and a world free of MIS domination; on the contrary, it means that pcs will grow more like mainframes. Likewise, systems software on pcs will grow to resemble what's now on mainframes (albeit friendlier), as exemplified by the convergence of DOS and UNIX.

SOFTWARE METAPHORS: WHAT I REPRESENT IS WHAT YOU SEE.

What are the unresolved questions in software? The obvious ones have to do with things such as record-locking, data integrity, cross-system connectivity, the sorts of issues we'll face as pcs become mainframes or vice versa. However small and personal they get, pcs used as mainframes will have to behave like mainframes. From a focus on single-user computer-human interfaces, pc software developers will also turn to explore computer-computer, multi-user interfaces (a.k.a. connectivity).

But those are the dull questions. Although these solutions may take creativity to discover and implement, they generally are discoverable, whereas new software metaphors must be invented.

One tough question is, How do you structure information ex post facto? It's fairly easy nowadays to get data out of a data base, what with menus, QBE and natural-language query front-ends. Putting it in is another matter altogether. Where's the natural-language system that can absorb five inconsistent sales brochures from five different companies and spit out a coherent product comparison? Where's the desk organizer that can catalogue all our notes and index them meaningfully without forcing us to pre-select key words? Things such as ACT from Conductor Software, Higgins from Conetics, etc., come close, but they seem so structured. We're thinking of a text equivalent to the Spreadsheet Auditor or the Cambridge Spreadsheet Analyst, a product that can determine or derive after the fact the underlying structure of what we entered. Will that take AI, or just clever algorithms?

What's the difference?

Metaphors play two roles in software: those that underlie an entire program, giving it structure and resonance, and those that represent a particular function or object. (A spreadsheet is an example of the first; an individual icon of the second.) What is the value of a metaphor? It makes the software easier to understand and, if it's well-done, it makes the software's behavior feel predictable and "natural" even to a novice user. It also suggests to developer and user things that the software might do. For example, the notion of deleting something by moving it into a trash can implies that there might be a way to bring it back again if you don't wait too long -- or put too much wet stuff on top of it.

Likewise, the metaphor of an outline implies depth to text. But that same structure can also be represented by another metaphor, a tree, which it can easily be converted to by a program such as Living Videotext's More. Thus a listing of the people in an organization can readily be converted into an org chart -- an idea suggested by the notion of a tree/hierarchy. What will be the next metaphors?
COPYRIGHT LITIGATION: WHAT I DEFINE IS WHAT I OWN?

The notion that we are entering an information economy is so trite that many of its implications remain unexplored. One issue, made pressing by Lotus's recent lawsuit against two alleged 1-2-3 clone-makers/copyright violators, is how information is to be owned. As a businessperson, we resent the intrusions of laws and regulations where mutual contracts will suffice, but information, not a "natural" object, must be defined to be owned -- an act that is itself the creation of information. That is, the discreteness of tangible property makes it easily discernible and ownable, but intangible goods such as air rights or copyrights must be determined and defined by standard, society-wide contracts (i.e., law) to avoid perpetual chaos.

Analogies to other intellectual works, such as music, literature and the like, are easy and enlightening, but they don't go far enough. Two factors distinguish software: It performs useful work, and new software often incorporates old software in a way more profound what's found in literature or art. Finally, software "communicates" with other software; i.e., its value depends in part on its relationship to other works of software.

Software is more than just an expression of ideas; it performs vital functions in commerce. It not only transmits information (cf. an instruction manual) but actually controls the carrying out of work. Thus public policy may determine that there's a public interest in the general availability of certain software that outweighs society's interest in allocating rewards to the individual who developed it. Of course, if there are no rewards, an individual's incentive to develop and a company's incentive to incorporate an idea into a product diminishes... We know, intimately, of a recent case in which the developer's inability to protect his product was an impediment to his funding.

On the other hand, letting those rewards roll in for too long is likely to cause stagnation. In a fast-developing area such as software, perhaps good ideas should be re-used and superseded every few years.

Facets of software

Copyright law makes a distinction between ideas, which are not protectable, and their expression, which is. Let's consider some aspects of software in this context: There's underlying code, a succession of 0s and 1s, the copying of which is clearly illegal. The inadvertent duplication of code, on a measurable scale, is also highly unlikely; even products performing the same function are unlikely to contain more than a few modules of identical code.

Second is functions of the software. What does the software do? The dividing line between this and look-and-feel is fuzzy: What software does in part determines how it feels. Function, theoretically, is the unprotectable aspect of software -- the idea: No one may have the exclusive right to create a general ledger, put calculations into a grid with cross-references from cell to cell, or offer a transposition-correction key (as needed here).

Third is data formats. This aspect of software is in some sense an "expression" of information, and theoretically copyrightable. The widespread use of a limited number of formats, protocols, etc., is as useful as the widespread use of a common language (a burning issue in such locales as Canada and those parts of the United States where Spanish is widely used).

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Fourth is the software’s "look-and-feel," the face it presents to the user. This is the aspect of a computer program, in addition to the underlying code, that is most commonly considered to be copyrightable. But where does function leave off and look-and-feel begin? Is look-and-feel a matter of the way the screen looks? Does replacing a clockface with a watch make an interface different? Do pull-down menus differ from pop-up ones? And what of the poor user, who likes to use the same commands, and see them in the same order, so he can switch more easily from one program to another? Does a menu with the same look-and-feel, but providing different functions, infringe on its original? Is the way a program accomplishes its functions a part of look-and-feel, or simply the same common sense that dictates similar arrangements of wheels, buttons and levers across different brands of car? (It may not matter with a car, since so much of its value consists of the tangible object. With software, intangibles are all a package can offer.)

Finally, there's a valuable intangible not specific to the software business -- the trademark. Part of Lotus's quarrel with Paperback and Mosaic lies in their use of the 1-2-3 name in their ads: Whatever copying there is would not be so bad if they didn't point it out so vigorously. Does a claim of similarity, however warranted, constitute infringement? And is it better or worse if that claim is untrue?

Copyright law also takes note of "fair use." Does using a clone of one product as part of another one -- Paperback's joining of spreadsheet and data base, for example -- change the legal impact of a product?

The role of licensing

One way to ensure both returns to the inventor and general availability of a useful technology might be to mandate licensing -- which is more or less what patent law is supposed (but frequently fails) to do. While there is no requirement to license a patent or to use it, once a patent has been licensed to one outside party, it must theoretically be made available for license to other parties on substantially similar terms. This idea smacks of government-mandated contracts, and it's unlikely to work smoothly.

Licensing at best is only a means to resolve some conflicts and broaden the availability of protected software once that category is defined. It is not in itself a definition or a resolution of the new issues raised by software's unique role in commerce and society. One might well ask: Are we flattering ourselves? Does all this matter? Is software really that vital to the general interest? Yes, it is. Software is rapidly becoming the infrastructure of our economy -- and our global competitive advantage...

CORPORATE DATA, CORPORATE CONCERN: WHAT I CONNECT IS WHAT I CONTROL.

As corporations become big users of pcs, pcs are falling under corporate control. That reflects not just budgetary and political concerns but also technological imperatives. Connectivity and data exchange are not so advanced that corporations can easily integrate hosts of diverse software and equipment; all this stuff must be hooked together to realize its full potential. Gone is the day when computers either accomplished transactions and managed data, centrally, or enhanced personal productivity, locally. One of their major roles is communication among users, within and among workgroups, and the collection and consolidation of data from dispersed locations.

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With the arrival of the 80386 and the recentralization noted above, we’re likely to see substantial shifts in the dbms market over the next few years. While computing power is decentralized onto pcs, control of data will be centralized, spurring a trend towards communications/connectivity, and the network/server architecture. Vendors of pc and mini dbmses alike are starting to shift nervously as their options -- SQL or dBASE/Dbase, retail or direct, MIS or individual decision-makers -- lose their clarity. Who holds the power? The vendor with millions of users? Or the one with MIS’s ear? Or is this the window for a total upstart? The concept of distributed data bases, with data continually updated in real time, has tremendous intellectual appeal, and appropriate software is starting to appear from vendors such as Ingres, Oracle and Sybase. But the set-up and installation problems are huge and complex, and communications costs are likely to persist; real-world solutions (such as Bob Flast’s at American Express) will mostly be more practical if less consistent.

**DISTRIBUTION: WHAT YOU BUY IS WHAT WHO SUPPORTS?**

At the same time, vendors, resellers and customers are still arguing over who should provide support for all these new products, both hardware and software. With the increased prevalence of products working together, it becomes more and more difficult to discern who is responsible for what. Applications vendors routinely answer questions that might more properly be directed to vendors of printers or operating systems; network vendors help solve application problems. A number of third-party support services such as MSR have cropped up; they help ease the burden on vendors and resellers, but they represent a threat by taking over account control.

Meanwhile, vendors are increasingly selling direct to end-users. President Lee Walker of PC’s Ltd. makes the valid point that customers in need can call PC’s Ltd. directly, rather than rely on middlemen of questionable capability. (PC’s Ltd. has differentiated its products not just with high-speed cpus but also with Smart-Vu, a diagnostic monitoring chip that can detect most hardware problems and describe them intelligibly to the user.)

While the reseller channels are happier than they have been for some time, many vendors are still defining (to put it politely) their distribution strategies. They must handle the conflicting claims of customers and various reseller channels. Several established vendors -- Apple, IBM, Compaq, 3Com, Computer Associates, mdb, and others -- have recently reduced their reseller ranks. (Yet less mature vendors such as Ansa have broadened distribution over the same period.) The ostensible reason is that networks and accounting require extensive support that not all resellers are qualified to offer. In a happy confluence of circumstances, the reduction in outlets reduces downward pressure on prices, so that the remaining resellers can afford to provide better support. Indeed, this is more or less what has happened in the reseller channel in general, as many of the worst-managed resellers have put themselves out of business, leaving the marketplace somewhat smaller but more profitable. New applications such as desktop publishing and enhanced E-mail are driving sales as well as raising support needs.

To be sure, many large customers have built internal support staffs and are looking only for price and product quality; many of these are buying direct or through mail-order. Yet support is not just user hand-holding: It’s product evaluation, product availability, and cross-application support. Just ask Mort Rosenthal of Corporate Software or Ira Weise of 800-Software.

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Roger Borovoy of Sevin Rosen will lead a session on copyright litigation with Dan Bricklin; John Doerr, Kleiner Perkins; Ron Palenski, ADAPSO; Camilo Wilson, Lifetree. Company sessions include Aion, Action Technologies, Aldus, AST Research, BPS, Centram, Computer Associates, Copyright Clearance Center, 800-Software, Gold Hill, Great Plains, Hercules, Intel PCEO, IntellilCorp, Lucid, mdbS, Metaphor, Micro D, Microlytics, MicroPro, Network Innovations, Odesta, Phoenix Technologies, Q.W. Page, Proximity, Quarterdeck, Renaissance, Software Funding, Sybase, Texas Instruments, Think Technologies, 3Com, WallSoft, Ventura, Video-7, and WordPerfect. Companion Colleen Barton of Stanford will lead a day-long geology field trip for companions (and miscreant attendees).

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SPEAKER PROFILES

JOHN SCULLEY, APPLE: WHAT I TOLD YOU IS WHAT IS SO.

This has been a good year for John Sculley. What sounded like outrageously confident statements last year have turned out to be true. The Mac has gained a solid if limited following in corporate America, and its prospects look brighter each month as software specifically for the 80386 fades into the future. Some companies are buying the Mac at the insistence of courageous users; others are finding that this desktop publishing system (like many a word-processor before it) has expanded into other uses. Jean-Louis Gassee, Apple's vp of development, tells the story of a large corporation that meets each month to consider the purchase of a Macintosh and LaserWriter for desktop publishing. The decision would be simple, he says, except that the company fears it may be used... and here he pauses for effect, a Gallic eyebrow raised... for other applications!

Sculley too enjoyed a moment of great satisfaction and some self-kidding last month as he held up the first public copy of AppleShare at the Seybold Conference: "When we announced this two years ago I thought it was a hardware product!" Some hardware products are due shortly -- and should provide a far easier transition for users than IBM's new 386 PC is likely to offer for current PC users. Apple, of course, has no need to differentiate its new products from its old since the existing Mac has no clones; the sole ownership of a standard does have its benefits. Apple's struggles over the last few years could be regarded as the travails inherent in the risky undertaking of making a proprietary product into a standard.

The significant achievement of AppleShare is its seeming ordinariness. The value of a simple user interface lies precisely in its ability to render complex operations simple. Features matter little when they are inaccessible to most users. AppleShare may offer fewer features than other network systems, but users can find and use all of them. To be sure, it would be nice to have a distributed system such as Centram's TOPS, without the need for a dedicated central file server, but that will come along in due course. And if Apple does its job right, end-users won't even notice, since AppleShare will still allow them to deal with a virtual centralized system with a common space for shared files, wherever they may exist physically.

With superb boxes out in the market, Apple's next task will be to build the connectivity to the IBM world that IBM itself is also working on. The proprietary features in IBM's 80386 machine are rumored to center on communications support; Apple is working to put much the same into the Mac. (It's intrinsically no harder to connect a Mac than a PC to a mainframe, although IBM certainly has more people trained in the technology.)

But life is never free of tensions. Apple must also maintain good relations with third parties even as it gains the strength to compete with them itself. Apple's Silver Surfer, a data base widely sold in France (by an independent company) that Apple is thinking of selling in the U.S., is already causing some distress among Mac dbms vendors such as Ashton-Tate, Odesta, and Blyth. The sensible response would be to let customers make the choice; the politic one for Apple may be to leave SS on the shelf as a spur to enhancements by third-party developers, who will know it's ready if needed. By all reports Silver Surfer is nice, but not so nice that that Apple would seriously injure its customers by keeping it off the market.

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ROD CANION, COMPAQ: WHERE THEY FOLLOW IS WHERE WE LEAD.

As the vendor of the industry's first significant 80386-based machine, Compaq fits the Japanese stereotype of stretching and innovating around standards, rather than superseding them. Yet that seems to be precisely what customers want -- and all that systems software developers can handle. The strength of demand for the Deskpro 80386 has surprised many people, including Compaq president Rod Canion, who says, "Major accounts have been telling us they have confidence in Compaq, and it meets their needs for speed. Many of these customers have developed inhouse applications that simply overtax an 80286... We have worked long and hard to get our machines into software companies. Many of them are writing 286 code on our 386 machine."

Compaq's basic strategy of adherence to industry standards (once they're determined) hasn't changed with the arrival of the 80386. But Compaq is taking a slightly more active role, says Canion, in ensuring that software companies take advantage of its enhancements: "Many are confused and worried [about the 80386], so we go in and gently nudge them in the right direction -- workstation-type software, that sort of thing." A proponent of Compaq as vehicle, Canion is a little uncomfortable talking about specifics.

The industry standard, by which Canion means the Intel 80X86 architecture, "is so broad and flexible it can do anything. It provides a way for new technologies to come in and evolve smoothly and painlessly. There's really no good reason for any company to have an incompatible break in the standard. If someone is planning to, there's only one reason for it, and that has to do with internal reasons, not customer needs."

Compaq has just announced another product distinguished by a superb implementation of existing ideas. With a screen clear enough to serve on a desktop computer, the Compaq Portable III is the kind of portable we'd like to own -- lighter than the old portable, yet more powerful, with a 12-MHz 80286 inside. After all, if it's for an executive, it should be as powerful as his or her desk machine. Osbornes sold because they were cheap; Compaqs because they were better.

The long-term questions facing Compaq begin with the one it has faced since inception: How can you successfully compete against IBM? That's not a question that can be answered with a long-term strategy, but rather with a fanatic, persistent commitment to compatibility, quality and to staying one step (not more) ahead. That is, don't get so far ahead that the customers may not follow. With both the Deskpro 80386 and the Portable III, Canion has demonstrated appropriate imagination in small things and appropriate humility in large things, avoiding the temptation to lead where customers hanging on IBM's every hint may fear to follow.

VITTORIO CASSONI, AT&T: WHAT I KNOW IS WHAT I AM.

Vittorio Cassoni, 44, is quite an intellectual fellow. Of his favorite city, New York, he says it's like the Florence of the fifteenth or sixteenth centuries; his aim in life is "to broaden the context with which I have rapport." Huh? In other words, "when you go to France, you feel Italian, but when you go to the United States, you feel European. And in Japan, you feel Western. Obviously, when you change context, you must learn to absorb uncertainty."

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There's not much farther Cassoni could go with current transportation technology, but in business too he has persistently broadened his scope, from IBM small systems design to IBM large systems marketing and general management. In 1980, seeking a challenge and involvement in "the guts of the business rather than further process," he left IBM to work for Carlo De Benedetti at Olivetti, ending up in charge of North American operations and building and managing the AT&T relationship.

Last year AT&T proposed that he join that company (with Olivetti's consent), and he now runs AT&T's Data Systems Division, realigned from ten units into three: Workstations and terminals, minis, and data networks, with UNIX belonging to all three. ("UNIX," he notes, "is a fantastic tool in our hand if we use it properly... The real objective is a standard. The UNIXes diverged because of our licensing policies to get it on many machines, but the market expects a binary standard. It's the only OS that has a chance of becoming a standard in the mid-range." As for the recent alignment of Microsoft and Interactive around a common implementation, he smiles mysteriously and says, "We had a lot to do with that."

In the pc business, says Cassoni, "we all... except Sculley, we all buy at the same drugstore. But in workgroup computing there is no leader. There where you have space for expression, you can succeed. We must redirect our efforts from single products to how the computer can be used in a workgroup. We want to provide the whole suite of administrative services for workgroup computing, based around UNIX. Just as when you buy a high-fi or stereo set, you can install it yourself."

Why AT&T, if he left IBM for something more entrepreneurial? "Data Systems within AT&T is a start-up [or turnaround]. I get a lot of autonomy, freedom -- and lots of people, money. If we can make it happen, we'll have done something the industry won't forget. It's the most challenging job I've ever had, another confrontation."

JIM NORMAN, IBM: WHAT WE SELL IS WHAT WE LINK.

Jim Norman, market development manager of IBM's southwest marketing division, is himself a model of the subject he will discuss at the Forum -- the integration of PCs and SNA. He has always worked on communications issues one way or another, developing marketing and positioning for such products as the 3277 (which he notes wistfully lasted exactly 15 years until its withdrawal from marketing last May 6), bisynch, SNA, and the ill-fated 3790 (IBM's earliest foray into distributed dp, a predecessor to the 8100).

Norman will talk about enterprise and establishment communications, but he will focus on Advanced Program-to-Program Communications. Why is APPC so important? Because it lets pcs and other systems talk to each other as peers. That is, neither system controls the other (as with terminal-to-host connections), nor does one system simply send the other files or data; instead, the two can cooperate, sending commands and executable statements back and forth. This is not just an architectural distinction: It leads to improved performance, as Norman will demonstrate.

Although little has been announced, we suspect that such capabilities will find their way into IBM's coming systems, with hardware support. While IBM has pledged to keep its PC system open so that software developers can sup-
port it, it has not extended the same promise to hardware developers that could replace it. Thus although the next PC will without doubt run existing PC-DOS programs, it will probably also offer special assistance to software that cannot run on other 80386 machines (Compaq’s Deskpro, for one example).

Norman has worked for IBM since he graduated from the University of Virginia in 1965 with an MBA; his first job, which took several months, was to install a monster 65K 360 mainframe at a large bank in Winston-Salem, NC. An explicator of ideas rather than a developer of them, he’s earned the internal nickname of "Preacher" for (among other reasons) his efforts to get IBM managers to adopt PCs for their own use. He has a habit of building a core group of willing managers who communicate electronically, forcing others to join in to stay in the loop. Those same managers, when they brought him in to expound on new trends for the troops, made sure he was on in the afternoon, says former boss Graham Beachum (now with Tandy): "They didn’t want to waste him in the morning when everyone was still awake." Founder of the Atlanta IBM Employees’ PC Club in 1982, Norman "had enough PC power in his office to launch missiles," says Beachum. In 1986 he moved to Washington to market PCs in communications applications to a large unidentified customer.

H.D. GRUPPENZUSAMMEN, VIENNA INST.: WHAT WE EACH THINK IS WHAT WE ALL THINK.

Unfortunately, Hans Gruppenzusammen is still in Vienna and could not be interviewed at length for this Forum program. However, he should have interesting things to say: His 1984 PhD thesis for the Eidgenössische Technische Hochschule in Zürich won him his current post as the youngest full professor (22) ever at the Vienna Institute for Communication and Meaning. We ran across Gruppenzusammen at the recent Conference on Computer-Supported Cooperative Work, where he had no formal role because his seminal work still exists only in German. Entitled "Miteinander: Exploration of the subconversation as a means of group communication," the 964-page thesis will be available in English from Morgan Kaufmann later this year. Until now a confirmed academic, Gruppenzusammen is interested in meeting U.S. venture capitalists to "explore possibilities," he says.

JOHN ROACH, TANDY: WHAT I SOWED IS WHAT WE REAP.

John Roach has worked at Tandy since 1967, when he joined the company as general manager of Tandy Computer Services. It was he who moved Tandy into the personal computer business ten years ago as vp manufacturing at Radio Shack. "I couldn’t design anything," he says, "but I was responsible for pushing it through the system. That had its interesting moments. We’d never sold anything as expensive as the $599 Model I before, so it took a little thought."

It was also Roach who scared Bill Gates out of his wits in 1977 when young Gates tried to sell him MS Basic -- a tale best told by Gates himself: "I didn’t scare him; he was just somewhat at a loss for words," amends Roach. "He was asking for too much, but he sold it at a flat fee. He didn’t realize the rewards per unit that he has learned to realize since then. At the time we’d rather have paid him a few bucks a copy; we had no aspirations to sell so many. Eventually, he insisted we tear the contract up."

Tandy, one of the earliest players in the PC market, lost some momentum with the arrival of the IBM PC. By failing to offer compatibility with IBM’s
system, Tandy lost sales and presence in the compatibility-conscious market of the mid-Eighties. But now, with compatibility an assumption rather than an issue, Tandy's fundamental strength -- control of its own distribution channel (and hence of its customers) -- has set it apart from competitors in a world where distribution and support are key issues.

From a vendor of home electronics, Tandy has successfully moved to address the business market too. Tandy's 1900 outside salespeople outnumber everyone in the market save IBM. "Our strength is medium and small business," says ceo Roach. "Fortune 500 sales are icing on the cake. We differ from most people in that it's not our primary objective, but still important. The small-business market is less competitive because most people haven't focused on it; they don't know how to sell one at a time and make money."

**TONY WOLFF, TONY WOLFF & CO.: WHAT THEY WANT IS WHAT WE RESOLVE.**

"The world of marketing is not as deterministic as we once thought," says Tony Wolff, 41. "Simply producing a great product does not cause the chain reaction we experienced in the past." Hence his dinner speech at the Forum: "The customer as quark: An irreverent look at the physics of marketing."

After doing graduate work in psychology at UCLA and Sonoma State, Wolff joined a traditional qualitative market research firm in the late Sixties, applying "an orientation towards group process" to marketing. But, he says, "market research can be a terrible device for testing new ideas. Traditional research is mechanistic; it asks questions and get answers. RCA tested TV and it failed: People thought it was a terrible idea -- a small box, a talking radio. People apply current experience to new products. With the pc, they were thinking about learning French, storing recipes. They had no idea of the potential."

So his firm joined with Synectics in Cambridge, MA, where he came up with the idea of "asking people questions, and then asking management what to do about it. Instead of giving the marketer a research report, you let him see the paradox, the contradictions. People want security -- and freedom. In computers, they want simplicity -- and power. And then you get management involved in figuring out what to do about it. You need creative problem-solving; you can't do it linearly."

He sold his part of that business in 1972, and proceeded to "exorcise all his fantasies" -- running a daycare center in Vermont, building a house for resale on spec, running a restaurant, working for a consumer advocate in Washington -- until his money ran out. In 1978, Max Factor hired him to work on a new fragrance, which led to Mattel, which led to Apple and Atari. "That was when they were all hiring from the packaged-goods industry," he notes. "We talked to users, the first hackers, but we didn't even ask them much about computers. We asked about their lives and dreams; we put the computer in context."

Tony Wolff & Co. delivers results in the form of edited, annotated videotapes of actual customers, which are frequently funny and poignant -- as well as shockingly informative. Our favorite lines: "Service is for machines; support is for people... Fathers provide service; mothers provide support." Wolff's customers include Apple, AT&T, Convergent, PacTel, IBM, Compaq and Hiram Walker, for a secret new beverage he won't discuss.
MIKE BUCKMAN, AMERICAN AIRLINES: WHEN YOU FLY IS WHAT WE WATCH.

If you had trouble getting a cheap seat on your way to Phoenix, blame Mike Buckman and his cohorts. After four years in operations research at TWA, Buckman joined American Airlines in 1979, just after deregulation, and developed the company's yield management function -- that is, allocation and pricing of seats based on factors such as day, date and time, special events, competitive flight availability, overbooking rules, and current inventories and sales rates. Says Buckman: "Every time we have a Comdex in Las Vegas, there are no cheap seats."

In 1982 Buckman was tapped to sign an internal non-disclosure agreement and set to work on a secret project, which turned out to be American's market-shaping AAdvantage frequent-flyer program. "The trick was to get a good jump on everyone else so they couldn't just copy us six months later," says Buckman. As a 1.2-million-mile American AAdvantage Gold Card-holder with occasional forays onto other airlines, we can vouch enthusiastically for the greater reliability and convenience of American's program. (How many times have you reached the gate without the appropriate little sticker, coupon, or other token of your membership? American does it all by computer.)

American is still working to provide stronger integration than the current linkages between Sabre, its main flight and reservations data base, run by ACP (IBM's venerable Airline Control Program), and its AAdvantage data, managed mostly by IMS. Within ACP they can find you by flight, but not by name alone -- which means that the wicked can still get away with double-booking in most cases.

Now vp of Subscriber Automation, Buckman, 39, is in charge of product development, sales and service for American's automation products for travel agents, airlines, hotels, and other travel vendors. He is overseeing a long-term switch from dumb terminals (Sabre has 53,000 of them installed) to pcs with local software. One of many airline companies switching to pcs this year but one of the first to use them effectively, American will both increase the power and friendliness of its services, and reduce their use of expensive communications and mainframe time. The company's EAAasy Sabre for individual travelers, introduced last summer, serves roughly 7000 people a month and is growing at 20 percent per month; Corporate Sabre was introduced last month. Those of you in the hardware business should note that American will probably buy 8-10,000 pcs this year -- and perhaps influence the purchase of even more.

For the moment, because of the travel agent lobby, the services for individuals are restricted to the making of reservations rather than actual ticket purchases. Sounding much like a polite software vendor talking about retailers, Buckman says: "Someone still has to issue the ticket and get it delivered to the customer. Agents that can add value to the transaction will be successful."

So, Mike, when are you going to develop a platinum card for us Fanatically Frequent Flyers?
"At MIT I thought you had to have a PhD to be entitled to contribute," he says, but somehow Rich Carpenter never quite finished his. First, he left MIT with his masters' in electrical engineering to get some real-world experience at Boeing working on logic design and advanced communications systems. Next, back at MIT working on a doctorate in computer science, he was lured away to help start up Index Systems, a firm that specializes in building custom information systems.

He ended up in professional services, running custom system development projects that proved technologically exciting but excruciating as management tasks. "I firmly believe that there's nothing as good or creative as a single good systems designer, but if you're trying to get a team of them to work together, they'd better all be operating off common assumptions," he says. "Most of them resist the idea of a methodology per se, but everyone has one; it just may not be defined. The trick is to let each designer incorporate his own methodology into his design tool."

The notion of the personal design tool spawned spin-off Index Technology. Since he had come up with the idea, Carpenter got the chore/challenge of running it. Index Technology has grown quite rapidly to an installed base of 5000, in part because of Carpenter's eclectic and willingness to adopt "foreign" ideas. Its primary product is Excelerator (Release 1.0, May 29), a $8400 (list, for a single unit) software design tool. Using a variety of techniques and methodologies, a user can draw flowcharts, data relationships and other means of specifying an application. The company's newest product, Customizer, costs $12,500 and enables builder/users to modify Excelerator to support their own techniques, methodologies and embedded routines.

Excelerator lets a system designer define and explore the structure of what he's trying to build; code generators, by contrast, simply take the directions and build what you describe without feedback (save prototypes). It's like trying to build a house by saying, "Build a door facing northeast. Make it 8 feet tall, 4 feet wide, of heavy oak... Place it 8 feet from the east corner of the house...." Only later may you discover that, measuring from the house's north corner, you have inadvertently placed a window 6 inches from the door. Excelerator lets you visualize what you are doing.

A PC-based tool, Excelerator can take on a multitude of forms and work in a broad array of contexts. Index is working to link Excelerator with complementary application generators from such vendors such as Pansophic (Telon), Transform Logic, Micro Focus (VS Workbench) and Forecross, so that Excelerator output could automatically drive a generator to produce working applications. With ABT, also in Cambridge, Index is building a project management system that will not just plan but actually manage the progress of a systems development project by monitoring the creation of designs within Excelerator. Index also resells Deltacom's Prism, a higher-level strategic planning tool that creates models and structures that can be fed into Excelerator for systems design. Finally, Index is providing Cullinet with a subset of Excelerator that holds a preconfigured, partially completed application dictionary; it works as a training and installation tool, Implementation Workbench, for Cullinet's manufacturing applications.

Juan: Quick, what's a "10" software engineer? Alice: A "5" with diagrams.
SCOTT MCNEALY, SUN MICROSYSTEMS: WHAT WE STANDARDIZE IS WHAT WE PERFECT.

Scott McNealy, president and CEO of Sun Microsystems, grew up in Detroit as the son of the vice chairman of American Motors. At 32, he still sees the computer business as a successor to the auto industry. "Sun has all these operations," he says excitedly. "It's as complex as an auto company. I have the most exciting job in this industry except for Ken Olsen. We're doing what Henry Ford did with the Model T."

Sun has built its own RISC chip, but any systems it builds thereon will cloak that nonstandard chip under a solid cover of standards such as UNIX and Ethernet. "Four years ago they thought we were crazy because we weren't proprietary. But we're in the 1920s of the computer industry. By the nineties, all we'll have left is the Big Four to Six... IBM, DEC, Sun -- that's easy!" McNealy says with a grin wry enough to acknowledge that it won't be easy at all. His list omits Apple, creeping up from the low end, albeit with a different strategy except for a growing focus on design applications. (Sun is entering Apple's turf -- market, products and channels -- with the pending purchase of Centram for about $20 million in stock.)

Nor do others consider Sun's future assured, charging that the half-billion-dollar company offers little value-added beyond good implementation. Of course, that's what they've been saying of the Japanese all along, too. McNealy considers Sun's blandness an asset: "We have relationships with Matra, Toshiba, Hyundai, ICL, Schlumberger, Kodak. There's no one we're incompatible with. A manufacturing company has to have that teamwork."

McNealy's longstanding ambition: To be a plant manager. His first job out of college (with a thesis on mass transit) was as a UAW foreman in a plastics molding plant: "If you think I look young now [we do], imagine what a babyface I was eleven years ago." But after McNealy went through Stanford Business School, he couldn't get a job as a plant manager: "They all wanted me to do strategy. I didn't have the cold-call personality, and they didn't need a plant manager."

McNealy beams when he talks about visiting Sun's plants in Mountain View and nearby Milpitas, CA, and in Billerica, MA: "I like to have stuff come in one end, fix it up, and see it come out the other. I love to walk the floor. Manufacturing needs a team; engineering is individual contribution. This is a manufacturing company."

GEORGE DeBAKEY, ADAPSO: WHAT I KNOW IS WHAT I CAN INFLUENCE.

To people in business, the government can sometimes look enviably powerful. To people in government, business can sometimes look enviably free to act. George DeBakey, 37, has tried both, and he has now signed on as executive
director of ADAPSO -- the trade association of private software companies that may both wield the power to influence government and share some of the freedom of of its private-enterprise constituents. In other words, as head of ADAPSO, DeBakey may be "more effective from the outside. I know where within the government we need to be working and what can be done."

Born and raised in deepest Iowa, DeBakey went to graduate school in Phoenix and earned a degree in international business, followed by an MBA from Southern Methodist University. Hired by Rockwell, he took his first trip overseas and stayed with Rockwell for nine years launching and managing various operations in Europe and the Middle East. That wasn't entrepreneurial enough, and he returned to the U.S. in 1982 to join Fleet Financial to consult with small/medium high-tech businesses on overseas matters. In July 1985 he was appointed to be deputy assistant secretary for science and electronics of the International Trade Administration for the Department of Commerce; in other words, he handled high-tech trade issues for Commerce, including the recent semiconductor agreement with Japan. "The agreement may be fine," he says, "but we haven't sufficiently pressured the Japanese to abide by it." DeBakey also pushed vigorously (with some success) to strengthen intellectual property rights overseas. Ansa's Ron Posner calls him "the only high-tech entrepreneur within the government."

At ADAPSO, he hopes to get the members more involved in international trade in particular, and in government in general. Although some of us may regret it, the government is playing an increasing role in our businesses. We cannot leave it alone because it won't leave us alone. DeBakey, an experienced government hand, should help even the balance of power. "Business can have influence," he says, "even though business doesn't always feel that way."

RON WATKINS, MBI: WHAT WE SUPPORT IS WHAT WE SELL.

Ron Watkins, 51, left IBM 30 days after his 25th anniversary with the company. (No, there was no financial benefit in waiting, "although there would be now," he notes wistfully.) Intending to start a value-added reseller business, he discovered Businessland: "It really fit what I was trying to do. Dave [Norman] and I had immediate rapport. I had looked at two other opportunities in the Valley for three months, but I closed in a week with Dave. I probably should have spent a little more time..." It turned out that they had too much in common: Both men wanted to run Businessland -- and Norman was chairman.

Back at the drawing board, Watkins got a call from Avner Parnes, chairman of MBI, who said he was getting ready to phase out and wanted to turn MBI over to someone who would take it through next stage of growth. "Rather than build my own," says Watkins, "I decided to start with MBI and do what I wanted to do ultimately anyway." He was named president and ceo last week.

His goal throughout has been to build a value-added company focused on the micro. He sees the market segmenting into the VADs (value-added dealers) and the DADs (discount-added dealers, a term borrowed from fellow ex-IBMer and 3Com director Burt Goldberg, who shares credit with Bill Krause of 3Com). "Real VADs," says Watkins, "provide not just delivery and accounts receivable, which seem to be the only value-added today, but also expertise, systems integration and support services." In his last job at IBM, group director of systems and administration for domestic operations, says Wat-
kins, "I ran the world's largest dp department. I understand what it's like on the other side of the table."

VICTOR ALHADEFF, EGGHEAD DISCOUNT SOFTWARE: WHAT WE KNOW IS WHAT WE SELL.

Victor Alhadeff learned about retailing the tough way: He sold shoes at Nordstrom's to finance his education at the University of Washington in Seattle. His competitors tend to equate retail with mass-merchandising and no-frills discounting: "It's like retail is a dirty word," he complains. But Alhadeff considers retail a full-service business: "The worst experience a customer can have is to ask 'What does it do?' and discover that no one in the store has ever booted it up."

A sharp merchandiser, Alhadeff has a sense for trends in the macro sense too. He packaged oil deals until the market changed, and glommed onto the micro business when he discovered his accounting people eschewing their million-dollar HP 3000 for Apples and VisiCalc. He took matters into his own hands after visiting three poorly managed stores in a vain effort to find software for his 13-year-old son. "But," he points out, "we didn't build Egghead on the premise of one store, then two. We started out with the idea of a large chain in mind. We bought a System/38 when we had three stores and $1 million in funding. We took a mature approach to an immature industry." (Subsequent investors include the Pru, Citicorp, and T. Rowe Price with $7 million, and more from other sources).

The stores do not look expensive, decorated with painted industrial shelving and pipe-racks (the better to show off the software). "I'm used to living a nice life, but our company doesn't," says Alhadeff. "Customers won't pay for these palaces, these Hyatt hotels. We're a mean, lean company. While other retailers have had to cut back the fat, we started without any. My experience in the oil business taints my perspective on this industry. Unanticipated events always cause problems for undercapitalized companies."

He's also concerned that margins industry-wide are too slim [although resellers typically discount away any extra margins they win from vendors]: "You shouldn't need a baseball bat to make a profit."

But Alhadeff pours money into what does matter: inventory and training. Egghead holds roughly $20 million in inventory to support about 45 stores. "I'm crazed about training," says Alhadeff. Salespeople who fail to show up for their weekly training classes (two hours by internal staff, two hours of product training by an outside vendor) receive a personal note from Alhadeff -- copied to their personnel files.

He waxes most eloquent over matters such as location and systems. Egghead moves into one market at a time, following the philosophy that regional operations make the most economic sense. Or put less delicately: "National doesn't make sense for us. We want to dominate our markets. We may be national but we'll get there differently from Businessland. There's a certain arrogance to having three stores in an area and advertising to your customer, 'Come drive for an hour to find me!' We want big markets to dominate!"
COMPANY PRESENTATIONS: SELECTED PREVIEWS

Action Technologies Demo of The Coordinator. The Coordinator acts as a manager of commitments among people (deadlines, promises, requests), rather than as a mere transmitter of messages. (Release 1.0, 24 Sept.)

Aldus/Ventura A moderated joint presentation. The two companies will explore their similarities and differences: Aldus is a typical start-up, independent and likely to go public shortly; Ventura is small and likely to stay so, leaving most of the people-intensive marketing and support tasks to partner/publisher Xerox Corp. Aldus's PageMaker software, developed by veterans of the publishing business, focuses on layout and the ability to manipulate pages directly; Ventura Publisher, developed by former employees of Digital Research, deals with documents more abstractly, keeping text and formatting information separate so that text can be edited and re-edited even after formatting. Aldus offers compatibility across the PC and the Mac; Ventura is PC/clone-based.

Forethought A product announcement, introduced by John Sculley. What a desktop publishing package is to a word-processor, Forethought's PowerPoint is to a graphics package. Designed to build presentations on a MacIntosh, it knows not just about graphics but also about sequence, layout, formatting (borders, etc.) and other factors important to effective presentations. We were impressed! Focused on the in-house presentation market rather than the more upscale slide-making market, this could replace our favorite media -- hand-waving and Magic Markers.

Centram What did 3Com want, and Sun buy (subject to legal work)? See Macs and PCs work together in perfect harmony.

Copyright Clearance Center How to get large corporations to pay for your software. This will be an interactive session, as CCC, a non-profit organization, is just entering the software business (from print media), and is looking for feedback. (Release 1.0, 31 October)

Great Plains Multi-user accounting for the Mac.

IntelliCorp AI, on LISP machines and PCs. (Release 1.0, 26 January 1987)

Lucid Not just another company pitch; a follow-on to the developers' roundtable. LISP developer and Lucid president Dick Gabriel will discuss "what computers can't do (and why not)." Computer software is lagging behind hardware by 15 to 20 years, he claims; "the computer can do much more, and this talk will focus on what those things are, and why we are in this sorry state." Gabriel suggests that current programming techniques and languages still make things too hard for the programmer -- which in turn makes things tough for end-users because programmers don't have the time or power to build easy-to-use, maintainable programs. Object-oriented programming is part but not all of the answer. For the rest, come hear Gabriel expound, with wit and insight.


Odesta Not just another Mac dbms. Odesta's Helix, based on a Macintosh, also works in the VAX environment.

Renaissance Making Windows magical. Three graphics products from a company run by Bill Roland, former vp hardware and peripherals at Microsoft.

Sybase The next generation of SQL dbmses. (Release 1.0, 1 July)

TI Software from the hardware company. Wally Rhines will talk about AI; demos will include Personal Consultant and TI's computer-aided software engineering product, IEF (for Information Engineering Facility).

WallSoft Preview of UI, for User Interface, a high-end software-engineering tool that generates dBASE applications. (Release 1.0, 26 January 1987)
WYSI-WHIMSY

What you see is what you get. --Xerox PARC (the original)

What you know is what I tell you. --The shadow
What you see is what I send you. --E-mail
What you see is what you want. --Dreams
What you think is what I think. --Harmony (or boredom)
What you see is what you know. --Narrow-mindedness
What you are is what I want. --Love
What you have is what I want. --Envy
What you love is what I hate. --Jealousy
What you are is what I need. --Passion
What you do is what I like. --Friendship
What you hate is what you are. --Despair
What you were is what I love. --Mother
What you see is what I let you see. --Alice L’Allure
What I did is what you told me. --Oliver North
What I am is how I look. --Madonna
What I am is who I know. --Robin Leach
What I see is what I own. --Ferdinand Marcos
What I own is more than I can wear. --Imelda Marcos
What I think is what you study. --Plato

What I dream is what I build. --Bill Gates
What they need is what we build. --Jim Manzi
What I say is what I mean. --Ross Perot
What I build is what they learn on. --Steve Jobs
What I dream is what I do. --Mitch Kapor
What we’ve got is what we sell. --Dave Wagman
What I say is what you do. --Jack Tramiel
What I see is what I link. --Bob Metcalfe
What I say is how I act. --Fernando Flores

What I
type
is how
I think. --Dave Winer

What\ is what\ you parse. --Gary Hendrix

What I say is what I’m told. --Pr guy
What I write is what I guess. --Reporter
What I learn is what I write. --EDitor
What I hear is what I tell. --Gossip
What I see is what I make. --Copyright infringer
Who we’ve got is what we sell. --Consulting house
What I find is what I sell. --Scavenger
What I know is what I manage. --Anonymous

What you want is what I want. -- Alice
What I want is what you want! -- Juan

We eagerly await our readers’ contributions to the genre. --ED
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Tony Wolff, Tony Wolff and Company, (707) 542-8589

COMING SOON...

• A debriefing on Microsoft's CD ROM conference.
• Natural-language processing.
• Support for accounting software.
• Text data bases.
• Expert systems in use: Evaluating mailing lists, etc.
• And many more...

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RELEASE 1.0 CALENDAR


March 4-7  Hannover Fair - Hanover, West Germany. Contact: Diana Hyland at Hannover Fairs USA, (609) 987-1202.


March 8-10  Cullinet applications and end-user computing conference - Dallas. With Rosabeth Moss Kanter, Mark Fox (Carnegie Mellon), Michael Treacy (Sloan/MIT), and others. Contact: Michael Greeley, (617) 329-7700.


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March 25-28  SOFTWARE PUBLISHERS ASSOCIATION SPRING CONFERENCE - Oakland, CA. Including "Corporate users on critical issues" -- not just kid stuff. Contact: Ken Wasch, (202) 452-1600.

March 29-April 1  ADAPSO SPRING MANAGEMENT CONFERENCE - Orlando, FL. Worth flying from Oakland to Orlando for. With a panel on development tools moderated by Paul Hessinger of Computer Task Group, a panel on AI tools moderated by Lou Odette of Apex, a panel on the 80386 moderated by Esther Dyson, as well as panels on software maintenance, micro-mainframe links, and other compelling topics. Call Sheila Wakefield, (703) 522-5055.

March 30-April 2  Ninth annual international conference on software engineering - Monterey. Sponsored by IEEE and other societies. With Larry Druffel, Software Engineering Institute (formerly with Rational); Robert Balzer, USC ISI; Ram Banin, Codesmith; Gerry Davis, Schroeder, Davis & Orliss; and others. Also, a "Tools Fair." Contact: Larry Druffel, (412) 268-7740.

March 30-April 2  Interface '87 - Las Vegas. Sponsored by the Interface Group, for corporate, government and institutional users. Contact: Keith Westerman or Linda Hanson, (617) 449-6600.


April 6-8  Facsimile and image communications systems conference - Boston. With speakers from Datacopy, Fujitsu, etc. Sponsored by CAP International. Contact: Jean O'Toole, (617) 837-1341.


April 8  AI Satellite Symposium - your place. Third in a series, with a focus on "AI productivity." Speakers include Ed Feigenbaum, TI's own George Heilmeier, Alan Kay, Herb Schorr, Doug Lenat, James Martin. Sponsored by Texas Instruments. Call (800) 527-3500 for information on hooking up.

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<tr>
<td>April 20-22</td>
<td>CD-ROM vs. micrographics - Monterey. Sponsored by Institute for Graphic Communication, with John Gale, Gary Kildall, Pat Call, and others. Contact: Dick Murray at (617) 857-9300.</td>
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<td>April 22-24</td>
<td>AEA financial conference for public companies - Boston. Meet with as many as you can manage of 50 electronics/computer companies; mostly for financial types. Contact: Dave McKell at (415) 857-9300.</td>
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<td>April 22-24</td>
<td>AI Long Beach - Long Beach, CA. Contact: Jim Hay at Tower Conference Management, (312) 668-8100.</td>
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<td>April 25-26</td>
<td>Softeach - Chicago. Sponsored by Softsel. For information, call (800) 325-9189, (314) 225-1724, or (416) 629-2222.</td>
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<td>May 6-8</td>
<td>ICP Million-Dollar Awards &amp; Conference - Indianapolis. Sponsored by International Computer Programs, Inc. With the one and only Larry Welke, plus an agenda of sales &amp; marketing topics. Contact: Judy Fary, (314) 844-7461.</td>
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<td>May 18-21</td>
<td>Navy Microcomputer Conference - Virginia Beach, VA. Sponsored by the Navy Regional Data Automation Center. Contact: Karla Rowlett at (804) 444-8486.</td>
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<td>May 21-22</td>
<td>TECHNOLOGICAL SUPPORT FOR WORKGROUP COMPUTING - New York City. Sponsored by NYU. Call Marge Olson, (212) 285-6077.</td>
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<td>May 27-29</td>
<td>CASE '87 - Cambridge, MA. &quot;First international workshop on computer-aided software engineering.&quot; Sponsored by Index Technology, Purdue and Northeastern Universities, Boston ACM; real-world but nonpartisan. Call Elliot Chikofsky, (617) 491-2100.</td>
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<td>June 1-3</td>
<td>SPRING COMDEX - Atlanta. Incorporating winter Comdex, by popular request. Contact: Linda Yogel, (617) 449-6600.</td>
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<td>June 15-18</td>
<td>National Computer Conference - Chicago. Sponsored by AFIPS and a host of other societies. Contact: Martha Byrne at (800) NCC-1987 or (703) 620-8925.</td>
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<td>July 13-17</td>
<td>AAAI-87 - Seattle, WA. So good, they made it earlier this year. Contact: Claudia Mazzetti at the American Association for Artificial Intelligence, (415) 328-3123.</td>
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<td>September 21-23</td>
<td>Conference on software maintenance - Austin, TX. Sponsored by several professional societies. Contact: Roger Martin, National Bureau of Standards, (301) 921-3545.</td>
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<tr>
<td>September 27-30</td>
<td>ADAPSO management conference - Colorado Springs, CO. Contact: Sheila Wakefield, (703) 522-5055.</td>
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Please let us know of any other significant events we should include.  
-- Lynn Frankenbach
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